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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,614	04/06/2000	Christophe Le Roy	ATOCH-174	9121

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EXAMINER

RHEE, JANE J

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 08/26/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/544,614

Applicant(s)

LE ROY ET AL.

Examiner

Jane J Rhee

Art Unit

1772

A-5-16

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9,11-16 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1,2,4-7,9,11-16 and 18-26 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-2,4,6-7,16,19,20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (6545091).

Lee et al. discloses a multilayer structure comprising a layer comprising a coextrusion binder comprising a blend comprising 5 to 30 parts of a cografted (col. 7 line 28) polymer (A), 10%wt (col. 3 line 44) of 65-95 parts high density polyethylene (A1) (col. 6 line 32) of with a density of 0.940-0.965 (col. 4 line 19) and a melt flow index of 0.45g/10min (col. 9 line 21), and 40-5 parts by weight of a polymer (A2) a metallocene polyethylene (col. 3 lines 46-48) with 0.01 to 3 percent by weight of an unsaturated carboxylic acid (col. 7 lines 5-6 and 46), and 65-95 weight percent (col. 6 line 32) of

polyethylene (B) of relative density of 0.93 to 0.94 (col. 4 line 20) and melt index of 0.45g/10min (col. 9 line 21) wherein the blend of the polymer (A) and polyethylene (B) have a relative density of 0.93-0.940 (col. 8 line 25-26) and melt flow index of 0.1 to 50 (col. 8 line 10 and col. 9 line 21) with a content of 0.005-5wt% of unsaturated carboxylic acid (col. 7 line 45). Lee et al. discloses a layer (E) directly attached to the binder consisting of saponified ethylene-vinyl acetate copolymer (EVOH), polyamide, polyester, or metal (col. 10 lines 121-25). Lee et al. discloses a rigid hollow body made of a multilayer structure according to the composition described above (col. 3 line 66). Lee et al. discloses that layer (E) is a metal of aluminum or copper (col. 10 lines 24). Lee et al. discloses that the unsaturated carboxylic acid is an alkyl methacrylate wherein the alkyl group which inherently has 1 to 24 carbon atoms (col. 7 line 8).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of applicant's admitted prior art. (specification page 3 lines 8-15).

Lee et al. discloses the adhesive composition described above. Lee et al. discloses a multilayer structure comprising three layers wherein the three layers are the HDPE layer, adhesive layer, and an EVOH layer or polyamide or polyester layer (col. 10

lines 21-22, col. 14 lines 3-4). Lee et al. fail to disclose a HDPE layer, a layer of the binder, either a layer of EVOH or an EVOH alloy or a polyamide-based layer, a second layer of the binder and an HDPE layer. Applicant's admitted prior art teaches that Petrol tanks usually consist of five layers consisting respectively of high density polyethylene, a binder, a polyamide or a copolymer having ethylene units and vinyl alcohol units (EVOH), a binder, HDPE.

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided Lee et al. with a HDPE layer, a layer of the binder, either a layer of EVOH or an EVOH alloy or a polyamide-based layer, a second layer of the binder and an HDPE layer in order to have provided a petrol tank as taught by Applicant's admitted prior art (specification Page 2 lines 8-15).

3. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Nagano (4397916).

Lee et al. discloses the binder composition described above. Lee et al. discloses that the layer (E) is a polyamide, EVOH, or polyester (col. 10 line 21-22). Lee et al. fail to disclose that the layer (E) is a polyamide resin comprising at least one structural unit of PA-6; PA-6;6; PA-6-10; PA-11; PA-6/6,6; or PA-12. Lee et al. fail to disclose that the layer (E) is the saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%. Lee et al. fail to disclose that layer (E) is the polyester resin of polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthenate, or a blend thereof. Nagano et al. discloses that the layer (E) is a polyamide resin comprising at least one structural unit of PA-6; PA-6;6; PA-6-10;

PA-11; PA-6/6,6; or PA-12, a saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%, a polyester resin of polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthenate, or a blend thereof for the purpose of increasing the adhesive strength between two layers (col. 1 lines 31-32).

Therefore, it would have been obvious to one of ordinary skill in the art to have provided Lee et al. with a layer (E) of a polyamide resin comprising at least one structural unit of PA-6; PA-6,6; PA-6-10; PA-11; PA-6/6,6; or PA-12, a saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%, a polyester resin of polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthenate, or a blend thereof in order to increase the adhesive strength between two layers (col. 1 lines 31-32) as taught by Nagano et al.

4. Claims 9,15,21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Adur et al. (4460632).

Lee et al. discloses the adhesive composition described above. Lee et al. discloses that it is well known in the art to have adhesive compositions based on acid grafted conventional linear polyethylene and acid grafted LDPE for comparable adhesive properties as acid grafted metallocene resins (col.3 lines 32-39). Lee et al. fail to disclose that polyethylene (B) is grafted with an unsaturated carboxylic acid. Lee et al. fail to disclose that polyethylene (A1) is a polyethylene homopolymer or an ethylene copolymer with a comonomer of an alpha olefin having from 3-30 carbon atoms, an ester of an unsaturated carboxylic acid, or a vinyl ester of a saturated carboxylic acid.

Lee et al. fail to disclose unsaturated carboxylic acid is an unsaturated dicarboxylic acid having 2-20 carbon atoms.

Adur et al. teaches that the polyethylene (A1) is a polyethylene homopolymer or an ethylene copolymer with a comonomer of alpha-olefin having from 3-30 carbon atoms (col. 2 lines 10-13), the unsaturated carboxylic acid is an alkyl methacrylate wherein the alkyl group has 1 to 24 carbon atoms (col.3 lines 29-31) and that the polymer (A2) is an ethylene copolymer with a comonomer of propylene or 1-octene (col. 2 lines 24-25) for the purpose of providing excellent bond strength to the substrate or substrates, and adhesion stability (col. 1 lines 22-23).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide the adhesive composition with a polyethylene (B) that is grafted with an unsaturated carboxylic acid in order to provide comparable adhesive properties as acid grafted metallocene resins (col.3 lines 32-39).

Furthermore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Lee et al. with a polyethylene (A1) that is a polyethylene homopolymer or an ethylene copolymer with a comonomer of alpha-olefin having from 3-30 carbon atoms, the unsaturated carboxylic acid that is an alkyl methacrylate wherein the alkyl group has 1 to 24 carbon atoms and the polymer (A2) that is an ethylene copolymer with a comonomer of propylene or 1-octene in order to provide excellent bond strength to the substrate or substrates, and adhesion stability (col. 1 lines 22-23) as taught by Adur et al.

5. Claims 1-2,4-7,9,14-16,18-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adur et al. (4460632) in view of Lee et al. and in further view of applicant's admitted prior art (specification pg 3 lines 8-15).

Adur et al. discloses 30 parts of a cografted (col. 3 line 22) polymer (A), 10%wt (col. 6 lines 39) of high density polyethylene (A1) of with a density of 0.940-0.965 (col. 2 lines 13-14) and a melt flow index of 1.5g/10min (col. 5 line 21), 20%wt (col. 6 lines 37) of low density polyethylene (A2), and 70 parts (col. 6 line 36) of polyethylene (B) of relative density of 0.93 to 0.94 grafted with 0.05-25wt% of unsaturated carboxylic acid (col. 4 lines 8-9). Adur et al. discloses a layer (E) directly attached to the binder consisting of saponified ethylene-vinyl acetate copolymer (EVOH) or metal (col. 4 lines 15-18). Adur et al. discloses a rigid hollow body/gasoline tank made of a multilayer structure according to the composition described above (col. 4 line 60). Adur et al. discloses that the polyethylene (A1) is a polyethylene homopolymer or an ethylene copolymer with a comonomer of alpha-olefin having from 3-30 carbon atoms (col. 2 lines 10-13). Adur et al. discloses that the unsaturated carboxylic acid is an alkyl methacrylate wherein the alkyl group has 1 to 24 carbon atoms (col.3 lines 29-31). Adur et al. discloses that polymer (A2) is an ethylene copolymer with a comonomer of propylene or 1-octene (col. 2 lines 24-25).

Adur et al. fail to disclose a metallocene polyethylene with 600 ppm-6% by weight of an unsaturated carboxylic acid. Adur et al. fail to disclose that the blend of polymer (A) and polymer (B) have a relative density of 0.930-0.940 and a melt flow



index of between 5 and 100g/10min. Adur et al. fail to disclose that the amounts of (A1) and (A2) are 60-95 parts by weight of (A1) for 40 to 5 parts by weight of (A2). Adur et al. fails to disclose that the binder contains 5-30 parts by weight of (A) per 95 to 80 parts by weight of (B). Adur et al. fails to disclose a HDPE layer, a layer of the binder, either a layer of EVOH or an EVOH alloy or a polyamide-based layer, a second layer of the binder and an HDPE layer.

Lee et al. teaches disclose a metallocene polyethylene with 600 ppm-6% by weight of an unsaturated carboxylic acid for the purpose of producing markedly superior adhesives compared with similar adhesive compositions but which contain comparable levels of acid grafted conventional linear polyethylene and/or acid (col. 3 lines 28-30).

It would have been obvious to one of ordinary skill in the art to have provided Adur et al. with metallocene polyethylene in order to produce markedly superior adhesives compared with similar adhesive compositions but which contain comparable levels of acid grafted conventional linear polyethylene and/or acid (col. 3 lines 28-30) as taught by Lee et al.

Applicant's admitted prior art teaches that Petrol tanks usually consist of five layers consisting respectively of high density polyethylene, a binder, a polyamide or a copolymer having ethylene units and vinyl alcohol units (EVOH), a binder, HDPE.

Adur discloses the same composition for the coextrusion binder as the applicant therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided the blend of polymer (A) and (B) with a density of 0.930-0.940 and a melt index of between 5 and 100g/10min, 60-95 parts of

weight of (A1) for 40 to 5 parts by weight of (A2), 5-20 parts by weight of (A) per 95 to 80 parts by weight of (B). since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in absence of unexpected results. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided Adur et al. and Lee et al. with a HDPE layer, a layer of the binder, either a layer of EVOH or an EVOH alloy or a polyamide-based layer, a second layer of the binder and an HDPE layer in order to have provided a petrol tank as taught by Applicant's admitted prior art (specification Page 2 lines 8-15).

6. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adur et al. (4460632) and Lee et al. (6545091) in view of Nagano (4397916).

Adur et al. and Lee et al. discloses the binder composition described above. Adur et al. and Lee et al. fail to disclose that the layer (E) is a polyamide resin comprising at least one structural unit of PA-6; PA-6;6; PA-6-10; PA-11; PA-6/6,6; or PA-12. Adur et al. and Lee et al. fail to disclose that the layer (E) is the saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%. Adur et al. and Lee et al. fail to disclose that layer (E) is the polyester resin of polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthenate, or a blend thereof. Nagano et al. discloses that the layer (E) is a polyamide resin comprising at least one structural unit of PA-6; PA-6;6; PA-6-10; PA-11; PA-6/6,6; or PA-12, a saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%, a polyester resin of polyethylene terephthalate, polybutylene

terephthalate, polyethylene naphthenate, or a blend thereof for the purpose of increasing the adhesive strength between two layers (col. 1 lines 31-32).

Therefore, it would have been obvious to one of ordinary skill in the art to have provided Adur et al. and Lee et al. with a layer (E) of a polyamide resin comprising at least one structural unit of PA-6; PA-6;6; PA-6-10; PA-11; PA-6/6,6; or PA-12, a saponified ethylene-vinyl acetate copolymer having a degree of saponification of about 90-100mol%, a polyester resin of polyethylene terephthalate, polybutylene terephthalate, polyethylene naphthenate, or a blend thereof in order to increase the adhesive strength between two layers (col. 1 lines 31-32).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane J Rhee whose telephone number is 703-605-4959. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 703-308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Jane Rhee  
August 12, 2003



HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1/12

